On the focus-sensitivity of counterfactuality

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Abstract

I show that the presence of the additive particle 'also' can have the effect of cancelling the counterfactuality of the consequent in counterfactual conditionals, but only when 'also' focus-associates with material inside the antecedent. Adopting Karttunen's (1971) idea that *conditional perfection* (CP; the strengthening of conditionals to biconditionals) is a necessary ingredient of the counterfactual inference of the consequent (which I write 'CF_q'), it follows that when CP is blocked, CF_q is also blocked. I show that when 'also' associates with material in the antecedent of the conditional, it reflects a context in which multiple causes for the same consequent are salient (a *multiple-cause context*). I then argue that multiple-cause contexts block CP. This gives rise to a more general characterization of the set of contexts that block CF_q: both other realizations of multiple-cause contexts (that do not contain 'also'), and contexts that block CP for other reasons are included in this set.

1 Introduction

Counterfactual conditionals typically come with inferences that their antecedent is false and that their consequent is false. Writing the antecedent of a conditional as p, and the consequent as q throughout, I will refer to the corresponding counterfactual inferences as CF_p and CF_q, respectively:

(1) If John had taken the bus, he would have been on time.
$\mapsto$ CF_p: John didn't take the bus
$\mapsto$ CF_q: John wasn't on time

In most of the literature on counterfactuality, attention is focused exclusively on CF_p, perhaps under the implicit assumption that what has been said about CF_p extends, mutatis mutandis, to CF_q as well. In this paper I will show that this implicit assumption is not warranted, and the empirical phenomena regarding CF_q are distinct from those CF_p, and therefore call for a different theoretical explanation.

Two major questions regarding counterfactual inferences concern their *source* (English has no dedicated counterfactual marker, so how is counterfactuality realized?) and their *cancellability*. This last property relates to the observation that the counterfactuality of p is not an entailment or a presupposition, because it can be cancelled in certain contexts. The most well-known example is due to Anderson (1951):

(2) If Jones had taken arsenic, he would have shown just exactly those symptoms which he does in fact show. [So, it is likely that he took arsenic].

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Here CF_p gets cancelled, but CF_q can also be cancelled, and crucially it can be cancelled independently from CF_p. This has has been noted at a few places in the literature, but has not been analyzed formally; I cite here an example from Declerck and Reed (2001:266):

(3) A: We are in time because we have taken the road I said we should take.
B: If we'd taken the other road, we would **also** have been here in time.
B′: #If we'd taken the other road, we would have been here in time.

Here CF_p is triggered in the regular fashion (we did *not* take the other road), but CF_q is cancelled (we *were* in fact in time). Reply B′ shows that the lexical item 'also' is in some way responsible for the cancellation of CF_q: leaving it out leads to a conditional that triggers CF_q in the normal fashion, and the contradiction between A's utterance (we are on time) and CF_q (we are not on time) makes it infelicitous.[1]

The presence of 'also' is not the only way to cancel CF_q (we will see more examples further on), nor do all instances of 'also' in the consequent of a subjunctive conditional have the effect of cancelling CF_q. This latter observation is an important empirical point, and in section 2 I will show that whether or not CF_q is cancelled depends on how 'also' associates with focus. This illustrates how the generation of CF_q is a focus-sensitive phenomenon, although I will reach a more general conclusion: the examples with 'also' will turn out to be just one instance of a more general characterization of contexts in which CF_q is cancelled, which depends on the information-structural context in which the conditional is uttered (section 3). In section 4 I will adopt a view, originally due to Karttunen (1971), in which *conditional perfection* (the pragmatic strengthening of conditionals to biconditionals; abbreviated CP) is a necessary ingredient for CF_q to be triggered. This means that when CP is absent for some reason or other, CF_q does not arise either. This is precisely the explanation I will provide in section 5: what the various CF_q-cancelling contexts have in common is that they are contexts that block CP. Some of these contexts have already been described as unperfectable contexts in the literature on CP, but I also propose a novel characterization of a set of contexts that blocks CP. I argue that CP is blocked in contexts that make several distinct causes (antecedents) for the same consequent salient, which I will refer to as *multiple-cause contexts*. The focus-association of 'also' relates to the information-structure of the context surrounding the conditional (e.g. which question under discussion it answers), and thus whether that context is multiple-cause or not. This solves the puzzle from section 2 of how blocking of CF_q can be sensitive to the focus-association of 'also'.

The focus-sensitivity of CF_q is thus different in nature from other cases in which focus interacts with counterfactual conditionals, such as the so-called Dretske-counterfactuals (Dretske 1972) and the cases discussed in Ogihara (2000). In those cases, focus plays a semantic (truth-conditional) role in restricting the set of worlds over which the conditional quantifies, while the type of focus-sensitivity I discuss in this paper is more pragmatic in nature: it reflects a certain information-structural environment that blocks conditional perfection, and hence also cancels the generation of CF_q.

2 Local and non-local 'also'

An important empirical observation is that not all instances of 'also' in the consequent of a subjunctive conditional have the effect of cancelling CF_q. In order to see this I introduce a

[1] As Declerck and Reed note, for many speakers the word 'still' can be used instead of 'also' in these contexts. It is surprising that 'still' and 'also' in this context appear to have very similar meanings, while in ordinary sentences the additive particle and (aspectual) 'still' diverge in meaning. I take this puzzle up in Tellings (2016).

context in which causal relations are made very explicit. This will help facilitate the somewhat subtle judgments, but examples of this kind commonly occur in natural speech.[2]

(4) **The Quiz Scenario**
Mary participates in a quiz show, in which she blindly opens one of the following four boxes, after which she wins its contents.

Box A	Box B	Box C	Box D
$100	$100 + laptop	empty	laptop

Suppose that Mary participated in this quiz, and she opened Box A, thus winning $100. After all the boxes are opened and their contents have been revealed, the following two statements are felicitous.

(5) [context: Mary opened Box A, so she won $100.]
a. If Mary had opened Box B, she would ALSO have won $100.
b. If Mary had opened Box B, she would also have won a LAPtop.

Focal stress, here indicated by capital letters is crucial in the assessment of these examples. The key point is that there is a difference with regard to CF_q in the pair in (5). In (5a), CF_q is cancelled: Mary did in fact win $100, so here 'also' has the same effect as in my first example in (3). In (5b), on the other hand, CF_q is not cancelled but triggered in the normal fashion (as in (1)): Mary did not win a laptop. In addition, (5b) becomes infelicitous when the context makes the consequent true (so that Mary did win a laptop):

(6) [context: Mary opened **Box D**, so she won a laptop.]
#If Mary had opened Box B, she would also have won a LAPtop. (= (5b))
(possible response: ... Wait a minute! She DID win a laptop!)

I claim that the difference between (5a) and (5b) lies in how 'also' associates with focus. As is well known, additive particles such as 'also' and 'too' have a focus-marked **associate** as well as a **presupposed alternative**, which is often thought to be anaphoric.

(7) I invited Bill_i to the party, and I also_i invited MARY.
associate of 'also' = Mary, presupposed alternative of 'also' = Bill

One way to identify the associates of 'also' in (5a) and (5b) is by considering the different meanings the sentences express. Sentences (5a) and (5b) make different counterfactual statements: in (5a) an additional hypothetical way of winning $100 is provided (opening Box B in addition to opening Box A), while (5b) provides an additional hypothetical prize (a laptop in addition to $100). Since the focus-marked associate is the item for which alternatives are taken into consideration, the associate of 'also' in (5b) is 'a laptop'. This intuition is further confirmed by intonation: the associate of 'also' receives focal stress.

In (5a) on the other hand, the relevant alternatives are opening different boxes (Box A, Box B, ...), so the associate of 'also' is the phrase 'Box B' which is syntactically located outside the consequent clause. This corresponds with a different intonation: focal stress in (5a) is on the focus particle itself, a pattern that is typical of postposed additive particles (Krifka 1999, to be discussed in section 3 below).

[2]Example (3) and the one in Iatridou (2000:232n) are examples from the literature; see Tellings (2016) for several examples from corpora.

Another way to state the difference is that in (5b), the particle 'also' is part of the proposition q (q = 'Mary also won a LAPtop'), but in (5a) it is not (q = 'Mary won \$100'). Therefore I will refer to 'also' in (5b) as **local** 'also' (since 'also' and its associate are clause-mates), and in (5a) as **non-local** 'also' (as it associates with material in a different clause).[3] The generalization is as follows:

	example	CF_q behavior	associate of 'also'
local 'also'	(5b)	does not block CF_q	in the consequent
non-local 'also'	(5a)	blocks CF_q	in the antecedent

This sets up the main puzzle: how can a difference in focus-association affect the generation of counterfactual inferences?

Since the conditionals with local 'also' behave like regular counterfactuals w.r.t. CF_q, the puzzle only concerns the non-local instances of 'also' (of course we will make sure that the explanation for cancellation with non-local 'also' I will present does not overgenerate to local 'also'). Indeed, the semantic behavior of local 'also' is correctly captured by existing theories. Since 'also' only contributes presuppositional content, we only need to worry about the behavior of that presupposition, and can remain neutral about the semantics of conditionals. The presupposition of 'also' triggered in the consequent becomes an unconditional presupposition, requiring that in the actual world Mary won something else than a laptop (in this case anaphorically satisfied by '\$100').[4]

(8) *Local 'also'*
$[\![$if Mary had opened Box B, she would also have won a LAPtop$]\!]^w$ is defined if Mary won something else than a laptop in w;
when defined, it is true if $[\![$if Mary had opened Box B, she would have won a laptop$]\!]^w$ is true (defined in the reader's favorite semantics for counterfactuals)

Now turning our attention to non-local instances of 'also', first there is a syntactic issue to be taken care of.

Syntax In the surface structure of (5a), non-local 'also' does not c-command its associate because the latter is in a different (higher) clause, violating a generally assumed requirement for focus particles. I argue that this requirement is still met for (5a), but at an earlier level in its syntactic derivation. The problem with c-command does not arise in sentences with a sentence-final *if*-clause. To see this, I adopt some basic assumptions regarding the syntactic structure of conditionals (Bhatt and Pancheva 2006) and focus particles. In particular, a sentence-final *if*-clause is a VP-adjunct, and the particle 'also' adjoins to VP as well (see e.g. Rullmann 2003). There are then three VPs: the smallest VP is that of the main clause (the consequent; VP_1), to VP_1 the *if*-clause right-adjoins (forming VP_2), and to VP_2 'also' left-adjoins forming VP_3.

[3] For reasons of exposition in (5a) the associate of 'also' is a proper part of the antecedent, but this is not a requirement. Suppose the quiz is such that you can win \$100 either by opening Box A or by answering a special bonus question. Then (i) would be another example of non-local 'also', with a larger associate:

(i) If Mary had [answered the BOnus question], she would ALSO have won \$100

Thanks to an anonymous reviewer for bringing this point up.

[4] The 'proviso problem' (the question whether or not an embedded presupposition becomes unconditional) for counterfactual conditionals remains a difficult issue (see e.g. Lassiter 2012). There are additional data with additive particles in conditionals that present a complicated picture of presupposition projection behavior, that I cannot discuss here for reasons of space (but see Tellings 2016 for further discussion). As far as I am aware, existing theories (based for example on probabilistic independence) cannot explain the full paradigm.

(9) Mary would [$_{VP_3}$ ALSO [$_{VP_2}$ [$_{VP_1}$ have won $100] [if she had opened Box B]]].

In this configuration 'also' c-commands the antecedent and all material inside it.

It has been argued for independently that sentence-initial *if*-clauses are derived syntactically from underlying sentence-final *if*-clauses by movement. For example, it has been suggested as a solution for a very similar problem in which c-command relationships are required between a reflexive or a quantifier in the consequent and its antecedent inside the *if*-clause (Bhatt and Pancheva 2006:650).

(10) a. If pictures of himself$_i$ are on sale, John$_i$ will be happy.
b. If her$_i$ child is late from school, every mother$_i$ is upset.

Since (9) involves two VP-adjuncts, they can combine with the main clause VP in two different ways. This gives rise to different c-command domains of 'also'. The difference between local and non-local 'also' can thus be characterized syntactically as a difference in adjunction height. This is illustrated for the sentence-initial *if*-clauses in (5), together with the movement steps by which they are derived:

(11) a. [if . . .]$_i$ [Mary would [$_{VP_3}$ ALSO [$_{VP_2}$ [$_{VP_1}$ have won $100] t_i]]]
(underlying form of (5a); non-local 'also'; 'also' c-commands antecedent)
b. [if . . .]$_i$ [Mary would [$_{VP_3}$ [$_{VP_2}$ also [$_{VP_1}$ have won a LAPtop]] t_i]]
(underlying form of (5b); local 'also'; 'also' only c-commands consequent)

I now move on to discussing how the presence of non-local 'also' is highly informative in terms of the information structure that surrounds the conditional utterance. This will involve the notion of *contrastive topic*.

3 Contrastive topic

Contrastive topic (CT) is an information-structural entity that has a certain prosodic realization, and a special semantic contribution. Prosodically, CT is marked by a B-accent (Jackendoff 1972), or a rise-fall-rise (L+H* L-H%) contour (this is a somewhat simplified statement, see Constant 2014 for phonetic details). Semantically, CT is used to convey that an answer is only a partial answer to a question (Büring 2003; Constant 2014). For example, in (12), the CT-marking on 'John' expresses that it is only a partial answer, i.e. that the normal exhaustive interpretation (that Mary did not drink wine) is not obtained.

(12) Q: Did John and Mary drink wine at the party?
A: [John]$_{CT}$ did. . .

The use of CT-marking comes with a constraint on the repetition of the same focus-marked constituent in a CT-Focus construction (Krifka 1999). This is illustrated in (13a):

(13) Q: Where do John and Mary live?
a. #A : [John]$_{CT}$ lives in [France]$_F$, and [Mary]$_{CT}$ lives in [France]$_F$.
b. A′: [John]$_{CT}$ lives in [France]$_F$, and [Mary]$_{CT}$ [also]$_F$ lives in France.

Although there is no established name for this constraint as far as I know, I will refer to it as the 'Repeated Focus Constraint' (RFC) for ease of reference.

(14) *Repeated Focus Constraint* (RFC) (informal)
$\#[\ldots \mathrm{CT}_1 \ldots \mathrm{Foc}_1 \ldots] \wedge [\ldots \mathrm{CT}_2 \ldots \mathrm{Foc}_2 \ldots]$ with $\mathrm{Foc}_1 = \mathrm{Foc}_2$

The RFC is of interest to our purposes because the violation of it in (13a) can be rescued by using a stressed additive particle such as 'also', as in (13b). Because in these cases 'also' receives focal stress, deviating from the canonical pattern in which (only) the associate is focus-marked (as in (7)), these are known as **stressed postposed additive particles** (Krifka 1999; Sæbø 2004).[5] Non-local 'also' as in (5a) is also stressed, so (5a) and (13a) deviate in the same way from the canonical intonation pattern of additive focus particles. This suggests that they are instances of the same phenomenon, and that non-local 'also' should be analyzed in the theory of stressed additive particles. Below I give additional arguments that further support this idea.

First, we observe that RFC as exemplified for simple monoclausal sentences in (13) extends to more complex syntactic structures such as conditionals. Here are conditional parallels to (13), with the exact same judgments as (13):

(15) What would have happened if I had opened Box A or Box B?
   a. #If you had opened $[\text{Box A}]_{\mathrm{CT}}$, you'd have won $[\$100]_{\mathrm{F}}$, and if you had opened $[\text{Box B}]_{\mathrm{CT}}$, you'd have won $[\$100]_{\mathrm{F}}$.
   b. If you had opened $[\text{Box A}]_{\mathrm{CT}}$, you'd have won $[\$100]_{\mathrm{F}}$, and if you had opened $[\text{Box B}]_{\mathrm{CT}}$, you'd $[\text{also}]_{\mathrm{F}}$ have won \$100.

Second, Krifka (1999:125) points out that postposed stressed focus particles have to be additive, they cannot be exclusive or scalar:

(16) John lives in France ALSO/TOO/*ONLY/*EVEN.

The same restriction holds for non-local 'also' in conditionals: in (5a), 'ALSO' cannot be replaced by stressed 'ONLY' or 'EVEN'.

Another relevant and important property is that the RFC is specific to CT-Focus constructions, since the exact same string of words as in (13a) is licensed when it answers a different question (and does not have CT-marking):

(17) Q: Who live in France?
A: $[\text{John}]_{\mathrm{F}}$ lives in France, and $[\text{Mary}]_{\mathrm{F}}$ lives in France.

This has led to the hypothesis that stressed postposed additive particle associate with CT:

(18) *Contrastive topic hypothesis* (Krifka 1999)
The associated constituent of stressed postposed additive particles is the contrastive topic of the clause in which they occur.

Thus besides the empirical parallels described above, we need to show that non-local 'also' in (5a) associates with a contrastive topic.[6]

First, in order to argue that sentences like (5a) indeed involve CT-marking, we need to appeal to the information-structural notion of CT. Observe that just like a conjoined question can have a partial answer by answering one of its component questions (as we saw in (12)), we can construct a conjoined conditional question with 'or' in the antecedent. A question of the

[5] They are called 'postposed' because it was thought that the focus particle receives stress whenever it linearly follows its associate, see Krifka (1999). My examples of non-local 'also' in sentence-final *if*-conditionals (see (9)) provide a direct counterexample to this alleged generalization.

[6] For reasons of space I cannot go into how Krifka's (1999) theoretical account can be extended to conditionals. In Tellings (2016) I show how some modifications are required, but the spirit of his analysis can be maintained.

form 'What if p or r?' is a consequent-based *wh*-question on two alternative antecedents (p and r). Partial answers take the form 'If $[\dots p_{\text{CT}} \dots]$, $[\dots q^1{}_{\text{F}} \dots]$' and 'If $[\dots r_{\text{CT}} \dots]$,$[\dots q^2{}_{\text{F}} \dots]$' to express $p \to q^1 \wedge r \to q^2$. This is illustrated in (19) (a direct parallel to (12)):

(19) What would have happened if you opened Box A or Box B?
If I had opened [Box A]$_{\text{CT}}$, I would have [won \$100]$_{\text{F}}$ ...

This is what happens in (5a) too. In the context it is given that Mary won \$100 by opening Box A. The question under discussion then is what would have happened if she had opened Box B. Sentence (5a) (with non-local 'also') is then a congruent answer, with CT-accent on 'Box B'. Stressed 'also' is required to rescue the RFC: another conditional with the same focus-marked consequent (winning \$100) was already salient.

Second, it has been argued elsewhere on independent grounds that conditionals set up a natural CT-inducing discourse. For example, Constant (2014) writes that "considering one hypothetical possibility almost inevitably leads to questions about contrasting possibilities" (Constant 2014:321), i.e. it is natural to contrast a hypothetical situation with alternatives. These contrast with factive clauses, such as for example *because*-clauses, as "there is no corresponding option of contrasting polar opposite *because*-clauses" (p. 323). These intuitions are supported by data of the following sort (p. 324):

(20) a. Because it is raining, we'll have to cancel the picnic. #And because it is not?
b. If it is raining, we'll have to cancel the picnic. And if it is not?

Indeed, using stressed 'also' in a *because*-clause is infelicitous:

(21) #Because it's really warm today, we go swimming. And because the pool is open, we ALSO go swimming.

These data illustrate that asking about alternative or additional antecedents in a conditional is possible, but asking about other reasons in a *because*-clause is not.

The conclusion of the above is that non-local 'also' as in (5a) indicates the presence of a particular discourse structure involving contrastive topic in the antecedent. We have seen that this corresponds to alternative causes for the consequent q.[7] Therefore I will refer to such contexts that make multiple causes salient as **multiple-cause contexts**. I pointed out in (17) that a repetition of foci can be licensed if there is no CT-marking involved. This predicts that in the domain of conditionals, there are multiple-cause contexts that do not require the presence of stressed 'also'. This is important because, anticipating somewhat, my theory will correctly predict that in those contexts CF_q gets cancelled too. I will mention two cases here. First, (17) itself has a conditional parallel:

(22) [context: A incorrectly assumes that only box A contains \$100]
A: I didn't win \$100. But if I had opened Box A, I would have won \$100.
B: If you had opened [Box A]$_{\text{F}}$, you would have won \$100, and if you had opened [Box B]$_{\text{F}}$, you would have won \$100.

Second, the string in (17) can be licensed in a 'listing context', a list in which each conjunct has a H-L% intonation contour. In (23) I give both the simple and the conditional case:

[7] The criteria for when causes count as distinct are the same as those for when focus alternatives for 'also' are distinct. So for example the presupposed alternative should not entail the associate of 'also':

(i) #If you'd eaten fruit, you'd have been healthy, and if you'd eaten an apple, you'd have ALSO been healthy.

(23) a. John lives in France$_{\text{H-L\%}}$, Bill lives in France$_{\text{H-L\%}}$, Mary lives in France$_{\text{H-L\%}}$, ...
b. [context: A played a quiz in which 8 of the ten boxes contain \$100]
A: I won \$100! I am so happy.
B: Well, that wasn't so hard really: if you had opened Box A, you would have won \$100, and if you had opened Box B, you would have won \$100, and if you had opened Box C, you would have won \$100, ... [with listing intonation, H-L%]

4 The source of CF$_q$

Before we can talk about the link between focus-association, multiple-cause contexts and the generation of counterfactual inferences, we need to spend a few words on how these inferences are generated in the first place. As I noted in the introduction, most attention has been directed toward CF$_p$. For English, a language that does not have a dedicated counterfactuality marker, two broad groups of accounts for the source of CF$_p$ can be distinguished: accounts in which CF$_p$ is the result of a modal interpretation of a past tense morpheme in the antecedent (a 'fake past', e.g. Iatridou 2000), and accounts in which CF$_p$ arises from a Gricean competition of presuppositions that conditionals have (e.g. Ippolito 2006; Leahy 2011).

One might hope that these accounts for CF$_p$ extend to CF$_q$ with only minor modifications, but for both types of theories some serious technical and empirical problems arise. For reasons of space I cannot discuss these issues here, but see Tellings (2016) for more details. An alternative option is to say that CF$_q$ is the result of CF$_p$ plus the special semantic relationship between p and q that is conveyed by the conditional. This is what Karttunen (1971) suggests, and it is the approach I will adopt. In particular, Karttunen relates CF$_q$ to conditional perfection (i.e., strengthening $p \to q$ to $\neg p \to \neg q$, discussed further in section 5). Then, CF$_p$ plus conditional perfection results in CF$_q$ via Modus Ponens.

(24) Utterance: $p \to q$ (Karttunen 1971)
Implicatures:

$\neg p$	(counterfactuality of p)
$\neg p \to \neg q$	(conditional perfection on $p \to q$)
$\neg q$	(=CF$_q$; by Modus Ponens)

An important prediction that this account makes, not mentioned by Karttunen, is that when conditional perfection is not triggered in a context for some reason or other, we predict that there is no CF$_q$ either in that context. This is exactly the type of explanation I will provide.

5 Conditional perfection

Conditional perfection (CP) refers to the pragmatic phenomenon that conditionals are strengthened to biconditionals, i.e. the strengthening of $p \to q$ to $\neg p \to \neg q$:

(25) If you mow the lawn, I will give you \$5. (Geis and Zwicky 1971)
implicature: if you don't mow the lawn, I will not give you \$5

CP is restricted in the sense that various groups of conditionals have been shown in the literature not to trigger CP (e.g. Horn 2000). These include for example semifactuals and biscuit conditionals. My account predicts that these types of conditionals do not trigger CF$_q$, and this is borne out. Both semifactuals and biscuit conditionals convey the truth of their consequent, and we find that the lack of CP coincides with the lack of CF$_q$:

(26) a. Even if John had studied all day, he wouldn't have passed.
no CP: $\not\Rightarrow$ If John hadn't studied all day, he would have passed
no CF_q: $\not\Rightarrow$ John did pass.
b. If you had been hungry, there would have been cookies in the cupboard.
no CP: $\not\Rightarrow$ If you hadn't been hungry, there wouldn't have been cookies
no CF_q: $\not\Rightarrow$ There are no cookies in the cupboard

Besides these groups of conditionals, we are most interested in the focus-sensitive behavior of 'also' in blocking CF_q. I showed that non-local 'also' indicates a multiple-cause context, but that there are other ways to realize such a context as well. It remains to be shown that multiple-cause contexts block CP. It is an intuitive idea that when multiple causes $p_1 \to q$, $p_2 \to q$, ... are salient, the inference $\neg p_1 \to \neg q$ is no longer made. Moreover, at various places in the literature the context-sensitivity of CP has been addressed, and often these claims are based (without explicitly mentioning so) on there being additional causes for the consequent; for example, CP fails in (25) in contexts in which there are several ways to earn \$5 (von Fintel 2001). There is also experimental evidence, for instance Politzer (2003) discusses studies that show that speakers are less likely to make the fallacy of denying the antecedent when other antecedents with the same consequent are salient.

In addition to these informal pieces of corroboration, we would like to derive the result within existing pragmatic theories for conditional perfection. CP has a long history in pragmatic theory (van der Auwera 1997). Many of the earlier accounts attempt to derive CP as a Gricean quantity or relevance implicature, and although these theories have mostly been superseded by theories that incorporate discourse structure (to be discussed below), it is worth pointing out that some of them already incorporated the intuition that multiple-cause contexts block CP (for example Van der Auwera suggests CP is a scalar implicature based on the scale $\langle \ldots$, 'if p, q and if r, q and if s, q', 'if p, q and if r, q', 'if p, q'$\rangle$, which explicitly contains multiple-cause contexts).

More recent theories of CP not only aim to explain the mechanism that generates the implicature but also the contextual restrictions that it is subject to. Summarizing a lot of work, many proposals suggest that perfection arises when the conditional is an *exhaustive* answer to the question under discussion (von Fintel 2001; Herburger 2015). For example, Herburger suggests that an exhaustive conditional answer is interpreted as 'if p, q and only if p, q' (with the second conjunct not pronounced). Her semantics for 'only if' then yields the CP interpretation. In these types of accounts for CP, it readily follows that multiple-cause contexts block CP: as discussed in section 3, in such contexts the conditional utterance is only a partial, and not an exhaustive answer to the question under discussion.

I closed section 3 with (22) and (23b) as examples of multiple-cause contexts without 'also'. My theory predicts that they nevertheless block CF_q, and this prediction is borne out: in both cases the context makes it true that the speaker won \$100, yet the conditional utterance is felicitous. The analysis of multiple-cause contexts has thus given us a wider characterization of contexts that cancel CF_q than just the data containing non-local 'also'.

6 Conclusion

The relation between the focus-association of 'also' in the consequent of a conditional and the cancellation of CF_q is an indirect one: when 'also' associates with material in the antecedent (i.e., non-local 'also') the alternatives are distinct causes for the consequent. Such a multiple-cause context blocks CP. When 'also' on the other hand associates locally, the alternatives (in my example) are different prizes. The context then presents one cause for different prizes, so

we do not have a multiple-cause context, and CF_q is triggered in the normal fashion. Because the presence of 'also' is only one indicator of a multiple-cause context, my analysis gave way to a wider characterization of contexts that block CF_q. These include both unperfectable conditionals such as semifactuals, and other types of multiple-cause contexts such as the ones marked by listing intonation or exhaustive focus.

The picture that arises from this is that counterfactuality should not be analyzed at the level of single utterances, but is rather a phenomenon that fundamentally interacts with the surrounding discourse and its topic-focus structure. I have shown how combining insights from theories on the semantics, pragmatics, and information-structure of conditionals can help analyze empirical generalizations. This encourages the development of a more integrated theory of conditionals, which will aid in solving other open problems in the area of conditionals.

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